Southwestern Bell

COMPETITIVE LOCAL EXCHANGE CARRIER (CLEC) OPERATIONS SUPPORT SYSTEM INTERCONNECTION PROCEDURES

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COMPETITIVE LOCAL EXCHANGE CARRIER (CLEC) OPERATIONS SUPPORT SYSTEM INTERCONNECTION PROCEDURES

Southwestern Bell

Account Manager _____

Telephone Number _____

IS Call Center Number	314-235-7225
LRAF Dial-up Number	214-800-1000
Local Provider Account Team	214-464-1665

This document is subject to change without prior notice.

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INTRODUCTION

This document provides information regarding options for electronic access to the Southwestern Bell Operations Support Systems (OSSs) and procedures for connecting to the Southwestern Bell Remote Access Facility (RAF). Access methods to electronic interfaces described herein are provided by Southwestern Bell in order to comply with the Telecommunications Act of 1996, Competitive Checklist Item, Access to Support Systems, which stipulates that Competitive Local Exchange Carriers (CLECs) must be given equivalent access to Southwestern Bell's data so they can service their customers in a timely manner.

The CLEC Remote Access Facility (LRAF) meets the Competitive Checklist requirement by providing CLECs with an entry point to access the functions of Southwestern Bell's OSSs.

Southwestern Bell provides non-discriminatory access to Southwestern Bell's OSS functions using either unbundled network elements or resale services for the following:

- Pre-ordering
- Ordering/Provisioning
- Repair and Maintenance
- Billing

Detailed information concerning the above functions can be found in the brochure titled "Southwestern Bell Access To Operations Support Systems (OSS)". This brochure can be obtained from your Southwestern Bell Account Manager.

The access methods described in this document are available to CLECs who meet the following criteria:

1. The CLEC has contacted the appropriate Southwestern Bell Account Manager expressing a desire to be an CLEC.
2. The CLEC has signed a Non-Disclosure Agreement with Southwestern Bell.
3. The CLEC executes an Interconnection agreement including an OSS Appendix or appropriate OSS language.
4. The CLEC has completed formal training sessions for those Southwestern Bell OSSs that the CLEC will be utilizing.

In addition, there are certain activities that must take place to establish connectivity with Southwestern Bell. These requirements are specified in other sections of this document.

The CLEC should coordinate all service connection procedures through their Southwestern Bell Account Manager. The Account Manager's name and telephone number is indicated on page 2 of this document.

A contract which includes a section on OSS or a separate OSS Appendix between the service provider and Southwestern Bell must be signed before any electronic information can pass between the two companies. An OSS Appendix must be part of an effective (10 days after Public Utility Commission (PUC) approval) Interconnection Agreement, or the effective Agreement must include a section on OSS before any LIVE traffic can pass between the two companies.

SUMMARY OF CHANGES

In an attempt to assist the reader in negotiating through this document, this section will identify the major changes that have been made throughout the text. The following table (***Change Description Table***) in this section, will itemize these and the prior version changes.

Change Description Table

DATE	DESCRIPTION	VERSION	SECTION	PAGE #
11/23/1999	Document change of LRAF Dial-up access number.	3.1		2
11/23/1999	Changed document and network standards contact from Mark F. Vernier to Jay Snider.	3.1	Summary of Changes	6
11/23/1999	Document upgrade of maximum supported analog access speed from 28,800 bps to 56,000 bps and changed authentication protocol requirement for ISDN terminal adapters from Challenge Handshake Authentication Protocol (CHAP) to Password Authentication Protocol (PAP).	3.1	Appendix 2: Dial-up Access Standards and Requirements Line items 4 and 5.	17

NOTE: This revision is a complete replacement of any previous version of this document. As such, previous versions of this document are no longer accurate and must be destroyed.

Any comments, questions, or suggestions regarding the contents of this document should be forwarded via email to Jay Snider (314-235-3126) at js6753@sbc.com.

IS CALL CENTER

After a contract is signed between the CLEC and Southwestern Bell, the Information Services (IS) Call Center is the single point of contact for all CLECs. The Call Center is dedicated to providing quality customer service in a professional and efficient manner.

The IS Call Center is staffed by employees with varying technical expertise, including extensive knowledge of network operations, intelligent workstations and CLEC specific applications. The Call Center assumes ownership of all problems reported by the CLEC and strives to provide prompt and knowledgeable resolutions. When necessary, our technicians coordinate with other help desks to provide prompt customer service.

Objectives

The IS Call Center will provide assistance to the CLECs by answering questions regarding access to Southwestern Bell systems and applications. The Call Center will answer all calls using an Automatic Call Distribution (ACD) telephone system. The ACD starts with three options.

- Option 1: The first option is to listen to a recorded announcement explaining the system status. We will attempt to provide current system, application and network status as we know it at all times. During outages or problem situations, we will update the message periodically during the life of the event.

- Option 2: The second option is to leave a voice mail message. Using this option, a caller can leave a voice message. The voice mailbox will page the Call Center to respond to the message.

- Option 3: The third option will route the caller to the next available agent. The ACD places the caller on hold (in the queue) if all agents are busy. Instead of waiting in the queue the caller will have an option to leave a message in the voice mail box. The IS Call Center agent will return the voice mail message as soon as possible – generally within 10 minutes.

The intent of the IS Call Center is to solve as many problems as possible on the first call. If the Call Center agent can not solve the problem they will involve another support group member for resolution and report back to the caller.

The IS Call Center is staffed Monday through Friday, 7:00 a.m. until 11:00 p.m. and on Saturdays from 8:00 a.m. to 5:00 p.m., Central. All other hours are covered by an on-call pager that is automatically activated by calling the IS Call Center phone number and leaving a message.

IS Call Center Phone Number -	314-235-7225
IS Call Center Fax Number -	314-331-1577
IS Call Center Digital Pager -	314-855-9985
IS Call Center E-mail -	ISCALL@SBC.COM

REMOTE ACCESS REQUIREMENTS

The CLEC should notify the Local Provider Account Team (LPAT) at One Bell Plaza, Room 525, Dallas, Texas, 75202., when they wish to establish electronic connections to Southwestern Bell's remote access facility. The LPAT telephone number is (214) 464-1665. An Account Manager at LPAT will be assigned to work with the CLEC to identify the functions that the CLEC wishes to perform, and to associate those functions with the corresponding application. Page 2 of this document lists the Account Manager's name and telephone number.

If the CLEC desires to have a private connection to the LRAF, the Account Manager will assist the CLEC in ordering this connection through the appropriate Southwestern Bell business office. The Account Manager or the CLEC should provide the circuit number and the service due date as soon as it is known to the IS Call Center.

Before an CLEC can access any Southwestern Bell systems, they must complete the *Competitive Local Exchange Carrier Application UserID Request Form*. The Account Manager will supply the CLEC with this form. After completing, the CLEC should return the form to the Account Manager, who will then authorized access by signing this form and forwarding it to the IS Call Center. The form can be e-mailed, Faxed or mailed to the Call Center. E-mail is preferred. E-mail can be sent to ISCALL@SBC.COM. If faxed, send to: (314) 331-1577. The form may also be mailed to: IS Call Center, One Bell Center, Room 14-N-30, St. Louis, MO 63101.

By signing the form the CLEC agrees to Southwestern Bell security requirements for access. A copy of those requirements will be supplied by the Account Manager along with the *Competitive Local Exchange Carrier Application UserID Request Form.* The CLEC must adhere to Southwestern Bell security requirements when accessing Southwestern Bell's systems.

The Account Manager can also provide a list of hardware/software requirements for access to each of the Southwestern Bell OSS functions and the hours of operation of each system.

Up to this point the Account Manager has been the first point of contact for the CLEC. After receiving authorization to access LRAF, future communication regarding connectivity and application functions should be referred to the IS Call Center. The Call Center becomes the primary contact for the CLEC to assist in answering questions and resolving problems; e.g., installation and configuration of software, correcting CLEC hardware/software anomalies and problems connecting to the modem bank, expired password, application problems, network problems such as ring/no answer, modem busy, initial connect problems as in the connection dropping before getting to application and connection problems after getting to application.

REMOTE ACCESS FACILITY

INTRODUCTION

This section may be used as a planning guide to identify most activities associated with providing for a network to network connection between an external entity and the OSS accessible via the Southwestern Bell LRAF. The LRAF is a data communications facility that provides a secure network interface from CLEC networks to Southwestern Bell's Data Communications Network (DCN).

The "REQUIREMENTS" appendixes (1, and 2) identify specific standards and requirements that are applied to remote access connections to the Southwestern Bell Operation Support Systems.

The other sections identify the procedural steps required to provide an external entity remote access to Southwestern Bell's data communications resources. Because each CLECs network facilities and environment may be different, there may be variances in the actual requirements. Appendixes 1 and 2 contain guidelines for use in establishing an electronic connection to the Southwestern Bell LRAF. Appendix 3 contains guidelines associated with EDI and miscellaneous Bulk Data Transfer. Appendix 4 contains a sample procedure to configure a dial-up interface using the Windows 95 TCP/IP communication's software. It should be noted that the actual procedures a CLEC uses for dial-up networking configuration and subsequent connection may vary somewhat from the example provided in this document.

All CLECs will be asked to provide answers to the applicable questions which follow and forward them to the IS Call Center contact. This person can assist the project planner in completing this checklist.

LRAF hours (Central) of availability correspond with the application's hours of availability. Some restrictions are as follows:

Operational Support System Access:	From 7:00 a.m. through 9:00 p.m.
Batch File Transfers:	Permitted from 9:00 p.m. through 11:59 p.m.
Maintenance Window:	Unavailable from 12:00 a.m. through 4:00 a.m.
Batch File Transfers:	Permitted from 4:01 a.m. through 7:00 a.m.

COORDINATION OF ACCESS REQUIREMENTS

1. Requirements Gathering
   a) Identify Workstation Requirements;
   b) Identify Users And Associated Workstation Addresses Requiring Access;
   c) Identify Specific Host Systems (Operations Support Systems) to Access.

2. Determine if a network to network connections with Southwestern Bell currently exists and if so, coordinate with Southwestern Bell to determine if multiple connections can exist based upon the IP addresses the CLEC is using over those connections.

3. Provide CLEC Network Contact Information to the Southwestern Bell.

PRIVATE LINE OR FRAME RELAY ACCESS

Circuit Provisioning Activities

1. CLEC Orders Connecting Circuit:
   a) Identify Source and Destination Building Locations for Circuits;
   b) Negotiate Circuit Requirements Between Networks;
   c) Negotiate Router Configuration Requirements Between Networks.

2. CLEC Orders Circuit Termination Equipment for Circuit Connection; i.e., DSU/CSUs, Smartjack, etc.).

3. CLEC Orders Router Equipment for their Circuit Equipment Termination.

4. CLEC Provides Circuit Order Information to Southwestern Bell:
   a) Provider of Circuit (AT&T, Sprint, etc.);
   b) Circuit Number;
   c) Circuit Speed;
   d) Circuit Line Coding should be B8ZS;
   e) Circuit Framing should be ESF;
   f) Other Providers of Intermediate Circuit Spans;
   g) DSU/CSU Manufacturer and Model;
   h) DSU/CSU Cable Interface to Router (V.35);
   i) Circuit Type (Private line or Frame Relay).

Network Provisioning Activities

1. CLEC provides Southwestern Bell the following information: TCP/IP Address For Remote Workstation(s). This information must be submitted via the Corporate Information Security group's *Competitive Local Exchange Carrier Application UserID Request Form*.

2. Configure the Remote PC workstation and the TCP/IP communications software package using the information as supplied by the Application Sponsor.

   Note: The PC workstation must be configured to access Southwestern Bell LAN based resources using only the TCP/IP protocol.

3. Test Network to Network Connectivity.

4. Test the Remote PC Workstation's Access to Southwestern Bell OSSs:
   a) Access the Southwestern Bell OSS using an IP address. User should see successful connection to authorized resource.

DIAL-UP ACCESS (ANALOG & DIGITAL)

ISDN Circuit Provisioning Activities

1. CLEC Orders Basic Rate ISDN (BRI) Circuit:
   a) This service will be configured as "2B+D". Each "B" channel is capable of voice and/or data at 64 or 56 Kbps. Each of these channels will be assigned a number known as a SPID (Service Profile Identifier).

2. CLEC Orders ISDN Terminal Adapter Equipment for their Circuit Equipment Termination.

3. CLEC Provides ISDN Circuit Order Information to Southwestern Bell:
   a) ISDN BRI Circuit Number _____
   b) ISDN BRI Switch Type _____
   c) ISDN SPID For “B” Channel 1 _____
   d) ISDN SPID For “B” Channel 2 _____
   e) Phone Number For “B” Channel 1 _____
   f) Phone Number For “B” Channel 2 _____
   g) Remote Terminal Adapter Type _____
   h) Remote Premise Contact Name _____
   i) Remote Premise Contact Address _____
   j) Remote Premise Contact Telephone Number _____

4. Configure the Remote PC workstation and the TCP/IP communications software package using the information as supplied by the Application Sponsor.

   Note: The PC workstation must be configured to access Southwestern Bell LAN based resources using only the TCP/IP protocol.

5. Initiate Dial-up Connection and Test Network Connectivity.

6. Test the Remote PC Workstation’s Access to Southwestern Bell OSSs:
   a) Access the Southwestern Bell OSS using an IP address. User should see successful connection to authorized resource.

7. Appendix 3 contains sample procedures to configure a dial-up interface using Windows 95 TCP/IP communications software.

APPENDIX 1

Private Line and Frame Relay Standards and Requirements

1. The Remote Access Facility for CLEC access is located in the Southwestern Bell Data Center, at 211 S. Akard, Room 367, Dallas, Texas, 75202.

2. Network to network connection between connecting entities will be a single circuit connection; i.e. private line or Frame Relay (T1 speeds or fractional T1), ISDN (Basic Rate, single or dual channel).

3. All Southwestern Bell routers used within the Remote Access Facility will be Cisco routers. Cisco Internetworking Operating System (IOS) specific issues and requirements will be communicated with the connecting CLEC when remote access service activation is negotiated.

4. All network communications between Southwestern Bell network address space and connecting CLEC network address space will use this network connection. All other logical/physical paths will be blocked.

5. Routing information will not be shared between entity routers. Static routes will be used.

6. Routed traffic over network link will use routed protocols only; i.e., Internet Protocol.

7. Non-Southwestern Bell to non-Southwestern Bell network system access is not permitted over the Southwestern Bell's DCN.

8. Point of demarcation will be the serial port on the Southwestern Bell provided router.

9. Southwestern Bell personnel will be responsible for the Southwestern Bell router and/or network configuration. The CLEC provided equipment on Southwestern Bell premises (DSU/CSU, etc.) can be managed and supported by Southwestern Bell personnel.

10. CLEC provided router(s) are not allowed on Southwestern Bell premise.

11. CLEC router(s) at the CLEC premise that must "communicate" with the Southwestern Bell router(s) must conform to standards supportable by the Southwestern Bell provided router.

12. Connecting CLEC must have a valid, public, registered Internet Protocol (IP) network address for network connection.

13. Connecting CLEC provides IP network addressing up to and including point of Southwestern Bell demarcation (router serial port on Southwestern Bell provided router). Connecting CLEC provides IP address for both ends of the circuit from this IP network address.

14. Connecting CLEC is responsible for providing a circuit between the CLEC site and Southwestern Bell per the following requirements:

    Supplier: Circuit may be ordered through CLEC's supplier of choice.
    Type: Private Line or Frame Relay.
    Bandwidth: 56 Kbps, fractional T1 (1.544Mbps).
    Installation: Should be coordinated through the IS Call Center.
    Termination Address: Terminate Circuit at:

    Southwestern Bell
    211 S. Akard, Room 367
    Dallas, TX 75202
    NPA-NXX = 214-464

15. Connecting CLEC is responsible for providing both terminating CSU/DSUs and all network infrastructure on their premise, including connecting router. One CSU/DSU, connectors and cables should be provided to Southwestern Bell per the following:

    Supplier: CSU/DSU and connectors may be ordered through CLEC's supplier of choice.
    Miscellaneous Cables & Connectors: Pigtail connectors for CSU/DSU, and CISCO V.35 male DTE cable (CAB-V35MT) must be sent with equipment for installation.
    Manufacturer/Model: CSU/DSU must be the same on both ends of circuit as follows:
    56Kbps Circuits: Rack-mounted General Data Communications (GDC) 500G/UXR, equipped without an enclosure.
    T1 Circuits: Rack-mounted General Data Communications (GDC) 552A V1.1 with Circuit Line Coding of B8ZS and Circuit Framing of ESF.
    Notification: There should be a reference to the "CLEC Name & Contact Number" on the bill of lading so Southwestern Bell will know who the CSU/DSU is for and who to notify when it has arrived.
    Ship To Address: Ship CSU/DSU to:

    Southwestern Bell
    Attention: LRAF Administrator
    211 S. Akard, Room 320
    Dallas, TX 75202

16. Connecting CLEC personnel will be responsible for CLEC router and/or network configuration, and all network equipment and circuit connection(s) up to the Southwestern Bell point of demarcation. The CLEC will be responsible for all replacement or repair of CLEC provided equipment and/or circuit(s).

17. All access to Southwestern Bell OSSs will be denied by default and permitted by authorized exception (as approved by application project manager).

18. All OSS access requires a valid Southwestern Bell user identification and password. UserIDs can be associated with any CLEC IP address; i.e., workstation.

19. Frame Relay encapsulation will be Internet Engineering Task Force (IETF) encapsulation.

20. Serial port interfaces in Southwestern Bell routers that terminate Frame Relay circuits will be “sub-divided” using sub-interfaces.

21. Multiple connecting partners will not enter Southwestern Bell network over the same physical Frame Relay termination.

APPENDIX 2

Dial-up Access Standards and Requirements

1. Dial-up access (using analog modem or ISDN Terminal Adapter) will be provided using Point to Point Protocol (PPP). The connecting device (PC workstation) must be capable of initiating a PPP connection using a TCP/IP communications software package installed on the connecting device. TCP/IP application software such as Telnet, TN3270, FTP, etc., must reside and execute directly on the connecting device.

2. When ISDN is utilized only one user workstation is allowed per port.

3. The point of demarcation for dial-up access (using analog modem or ISDN Terminal Adapter) will be the "modem" port on Southwestern Bell provided access server. The dial-up phone number will be provided to the connecting CLEC with the Southwestern Bell user identification and password information.

4. The Access Server modems are optioned to support analog dial-up speeds at a maximum connection rate of 56,000 bps. The modems will automatically detect the connection speed of the sending modem and adjust accordingly. The connection preference for the data connection is 8 data bits, 1 stop bit and no parity. TCP/IP header and data compression are supported.

5. The Access Server(s) are optioned to support ISDN dial-up speeds at a maximum connection rate of 128,000 bps. These servers support single or dual channel (Multi-link PPP) ISDN access. Password Authentication Protocol (PAP) support on the connecting Terminal Adapter is required. The connection preference for the data connection is 8 data bits, 1 stop bit and no parity. TCP/IP header and data compression are supported.

6. The Access Server will supply the end user's connecting device with an IP address, domain name, default gateway and Domain Name Server (DNS) address(es) via BOOTP.

7. Access to Southwestern Bell systems via analog or ISDN dial-up will require user authentication via a unique Southwestern Bell user identification and password combination. Southwestern Bell will provide the user identification and password to the connecting CLEC.

APPENDIX 3

Section 1: EDI Access Standards and Requirements

1. A CLEC may use SSLv3, Connect:Direct (NDM), Commercial Value Added Network (VAN) over a Private Line or Frame Relay connection into the LRAF, to send EDI transactions to Southwestern Bell for processing. FTP is supported as a testing mechanism but access should be limited to non-concurrent FTP sends to the SWBT environment. FTP entails manual re-try activities and confirmations. While both NDM and FTP are supported, it is important to note that NDM provides other value added services above standard FTP, such as checkpoint restart, confirmation of file transmission and reception, automated job scheduling, etc.

2. A CLEC may NOT use SSLv3 or Connect:Direct (NDM) over a dial-up connection into the LRAF, to send EDI transactions to Southwestern Bell for processing.

3. SBC is committed to support EDI guidelines as developed by Industry Standard Forums. Industry web-sites for ATIS/TCIF/EDI SOSC should be referenced for applicable documentation.

4. A CLEC may use a VAN service to send EDI transactions to Southwestern Bell for processing. VAN services will NOT be directly connected into the LRAF.

5. The LRAF is not a store and forward service. It provides for a point of network interconnection.

6. All standards and requirements as identified in Appendix 1 (Private Line and Frame Relay Standards and Requirements) apply to EDI.

Section 2: Miscellaneous Bulk Data Transfer Access Standards and Requirements

1. A CLEC may use Connect:Direct (NDM) or FTP over a Private Line or Frame Relay connection into the LRAF, to send bulk data transfers to Southwestern Bell for processing. A CLEC may use Connect:Direct (NDM) or FTP over a Private Line, Frame Relay, or dial-up connection into the LRAF, to send miscellaneous bulk data transfers to Southwestern Bell for processing. While both NDM and FTP are supported, it is important to note that NDM provides other value added services above standard FTP, such as checkpoint restart, confirmation of file transmission and reception, automated job scheduling, etc.

2. A CLEC may use a VAN service to send miscellaneous bulk data transfers to Southwestern Bell for processing. VAN services will NOT be directly connected into the LRAF.

3. The LRAF is not a store and forward service. It provides for a point of network interconnection.

4. All standards and requirements as identified in Appendixes 1 and 2 (Private Line and Frame Relay Standards and Requirements, and Dial-up Standards and Requirements) apply to miscellaneous Bulk Data Transfer Access.

Section 3: EDI and Miscellaneous Bulk Data Transfer Provisioning Activities

1. The Southwestern Bell Account Manager will provide the CLEC with the necessary form for requesting access to send/receive EDI transactions and/or bulk data. This form will be supplied to the Southwestern Bell Account Manager by the IS Call Center. This request form identifies which batch files are available via NDM or FTP.

2. The form will be completed by the CLEC and returned to the Southwestern Bell Account Manager.

3. The Southwestern Bell Account Manager will email the completed form to the IS Call Center at ISCALL@SBC.COM. Incomplete forms will be returned to the Southwestern Bell Account Manager for completion.

4. The IS Call Center will forward the form to SBC Corporate Information Security (CIS) to establish network connectivity and appropriate permissions.

5. The IS Call Center will forward the form to the RACF Help Desk to establish RACF authority, Logon IDs and passwords.

6. The IS Call Center will forward the data set name, together with the Logon ID and password information to the appropriate application groups.

7. The IS Call Center will email the processed form back to the Southwestern Bell Account Manager.

Section 4: Guidelines for Use of FTP for EDI

FTP can be considered for use in beginning the EDI testing process. Since many sites have FTP, the ability to start testing sooner may make FTP useful where test data is non-critical.

Since FTP is a technology that provides reliable delivery, but does not guarantee delivery, it is not deemed appropriate for a production EDI environment. Where a CLEC feels the need to use FTP in production they need to obtain an exception waiver from Southwestern Bell. Such an exception would only be allowed where projected transaction volumes are minor and the use of one of the standard protocols would impose a significant hardship to the CLEC.

FTP transmission measurements are taken at the time of the first attempt to send to the CLEC. Where a CLEC receiving platform is unavailable, Southwestern Bell will provide re-transmission on request but this re-transmission would not change the initial measurement.

APPENDIX 4

CONFIGURE A DIAL-UP INTERFACE IN WINDOWS 95 FOR TCP/IP

When using the Windows 95 TCP/IP Communication's Software package, the software may be configured to communicate with the Dial-up adapter as follows. It should be noted that the actual procedures a CLEC uses for dial-up networking configuration and subsequent connection may vary somewhat from the example provided in this document.

Verify Dial-Up Networking is installed:

A. Click Start-Settings-Control Panel.
B. Double-click “Add/Remove Programs” in the Control Panel.
C. Select the “Windows Setup” tab.
D. Select “Communications” in the list of components and click the “Details” button.
E. Ensure that the box next to “Dial-Up Networking” is checked.
F. Click “OK”.
G. If “Dial-Up Networking” is not installed, you may be prompted for files located on the Windows 95 CD or diskettes.

Verify the correct network components are installed:

A. Click Start-Settings-Control Panel.
B. Double-click “Network “ in the Control Panel.
C. Ensure the following components are installed:
    1) Client for Microsoft Networks
    2) Dial-Up Adapter
    3) TCP/IP -> Dial-Up Adapter.
    4) File and printer sharing.

    If all are installed, click the “Cancel” button to exit. Otherwise, install any components missing based on the following:
    1) Client for Microsoft Networks, if not installed:
        a) Click the “Add…” button.
        b) Select “Client” and click the “Add…” button.
        c) Select “Microsoft” in the left column, and “Client for Microsoft Networks”, in the right column then click the “OK” button.
    2) Dial-Up adapter, if not installed:
        a) Click the “Add…” button.
        b) Select “Adapter” and click the “Add…” button.
        c) Select “Microsoft” in the left column, and “Dial-up Adapter” in the right column then click the “OK” button.

3) Microsoft TCP/IP, if not installed:
   a) Click the “Add…” button.
   b) Select “Protocol” and click the “Add…” button.
   c) Select “Microsoft” in the left column, and “TCP/IP” in the right column, then click the “OK” button.

4) File and printer sharing for Microsoft Networks, if not installed:
   a) Click the “Add…” button.
   b) Select “Service” and click the “Add…” button.
   c) Select “Microsoft” in the left column, and “File and printer sharing for Microsoft Networks” in the right column, then click the “OK” button.

Verify the network components are configured properly:

A. Click Start-Settings-Control Panel.
B. Double-click “Network” in the Control Panel.
C. Ensure the following are properly configured:
   1) TCP/IP Dial-Up Adapter:
      a) Select “TCP/IP Dial-Up Adapter” and click the “Properties” button.
      b) In the “IP Address” tab select “Obtain an IP address automatically”.
      c) In the “WINS Configuration” tab select “Disable WINS Resolution” only.
      d) In the “DNS Configuration” tab select “Disable DNS” only.
      e) In the “Bindings” tab ensure “Client for Microsoft Networks” and “File and printer sharing for Microsoft Networks” are checked.
      f) Click “OK” to exit the TCP/IP Properties window.
      g) Click “OK” again to exit the Network window.

Configure New Connection:

A. Click Start-Programs-Accessories-Dial-Up Networking.
B. Double-click “Make New Connection”.
C. Name the connection “Southwestern Bell Connect”.
D. Select the proper modem for your machine.
E. Click the “Next” button.
F. Enter the phone number to access the system in the ‘Telephone number’ field. Area Code should be left blank. Be sure to include any special prefixes to access an outside line. For example, if you dial ‘9’ to get an outside line, then the phone number may appear as follows: 9, 800 555-5555.
G. Click the “Next” button.
H. Click the “Finish” button.
I. An icon will be created in the ‘Dial-Up Networking’ window with the name ‘Southwestern Bell Connect’.

Verify new connection is configured properly:

A. Double-click on “My Computer”.
B. Double-click on “Dial-Up Networking”.
C. Right-click on the newly established connection and select “Properties”.
    1) Ensure the phone number is the correct.
    2) Ensure “Use country code and area code” is unselected.
    3) Click on the “Configure” button.
    4) In the “Options” tab ensure “Bring up terminal window after dialing” and “Display modem status” are both checked, then click “OK”.
    5) Click on the “Server Type” button.
    6) Ensure the following:
        a) Type of Dial-Up Server is set to “PPP: Windows 95, Windows NT 3.5, Internet”.
        b) Under Advanced options, “Log on to network” and “Enable software compression” are both checked.
        c) Under Allowed network protocols, only “TCP/IP” should be checked.
    7) Click on the “TCP/IP Settings…” button.
    8) Ensure the following are all checked:
        a) Server assigned IP address.
        b) Server assigned name server addresses.
        c) Use IP Header compression.
        d) Use default gateway on remote network.
    9) Continue to press “OK” until you return to the Dial-up Networking window.

To establish a connection:

A. Double-click on the icon for the new connection (Southwestern Bell Connect) under “Dial-Up networking”.
B. Ensure all Phone number information is correct, including any special prefixes to access outside lines.
C. Click on the “Connect” button (Note: do not enter password on this screen, the user will be prompted for it once connected).
D. When the “Post-Dial Terminal Screen” window appears,
E. Press “Enter”.
F. Enter username (userid) and password.
G. When the ‘Main Menu’ appears, select “1” to establish a PPP Connection.
H. Click the “Continue (F7)” button.
I. After the connection has been established and the transmission speed and the running counter are shown, the connection dialog box should be minimized.

To disconnect:

A. If the connection dialog box was minimized, click on the icon to restore the window.
B. Click the “Disconnect” button.